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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/446,915	05/22/95	GOEDDEL	D P0897P2

18N2/0102

GENENTECH INC
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EXAMINER	
[illegible]M, J	
ART UNIT	**PAPER NUMBER**
1812	14

DATE MAILED: 01/02/97

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

☑ Responsive to communication(s) filed on 8/23/96

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 D.C. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☑ Claim(s) 11-13, 17, 51, 52 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☑ Claim(s) 11-13, 17, 51, 52 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☐ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____.

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☐ Notice of Reference Cited, PTO-892

☑ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2, 4, 5, 11, 13

☐ Interview Summary, PTO-413

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

-- SEE OFFICE ACTION ON THE FOLLOWING PAGES --

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APPLICATION NUMBER	FILING DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NO.
08/446,915	05/22/95	GOEDDEL	D P0897P2

18N2/1217

GENENTECH INC
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EXAMINER	
ULM, J	
ART UNIT	**PAPER NUMBER**
1812	14

DATE MAILED: 12/17/96

This is a communication from the examiner in charge of your application.
COMMISSIONER OF PATENTS AND TRADEMARKS

OFFICE ACTION SUMMARY

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1) Claims 11 to 13, 17, 51 and 52 are pending in the instant application. Claims 11 and 17 have been amended, claims 51 and 52 have been added and claims 1 to 10, 14 to 16 and 18 to 50 have been canceled as requested by Applicant in Paper Number 10, filed 23 August of 1996.

2) The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The specification is objected to under 35 U.S.C. § 112, first paragraph, as failing to provide an enabling disclosure and an adequate written description of a isolated nucleic acid encoding a human analog of a murine TRAF1 or TRAF2. Amgen Inc. v. Chugai Pharmaceuticals Co. Ltd., 18 U.S.P.Q. 2d, 1016, held that;

> "A gene is a chemical compound, albeit a complex one, and it is well established in our law that conception of a chemical compound requires that the inventor be able to define it so as to distinguish it from other materials, and describe how to obtain it. *See Oka*, 849 F.2d at 583, 7 USPQ2d at 1171. Conception does not occur unless one has a mental picture of the structure of the chemical, or is able to define it by its method of preparation, its physical or chemical properties, or whatever characteristics sufficiently distinguish it. It is not sufficient to define it solely by its principal biological property, *e.g.*, encoding human erythropoietin, because an alleged conception having no more specificity than that is simply a wish to know the identity of any material with that biological property. We hold that

> when an inventor is unable to envision the detailed constitution of a gene so as to distinguish it from other materials, as well as a method for obtaining it, conception has not been achieved until reduction to practice has occurred, *i.e.*, until after the gene has been isolated"

The instant specification does not actually describe an isolated DNA encoding a human TRAF protein or the TRAF protein encoded thereby. In particular, it does not identify those properties of such a DNA which distinguishes it from related DNAs such as those encoding the murine TRAF proteins which are described in the instant specification.

The evidence presented in the instant specification supports a conclusion that the DNAs encoding the murine TRAF proteins which are described in the instant specification, and the proteins encoded thereby, are structurally and functionally predictive of analogous mammalian DNAs and proteins. The instant specification, therefore, provides adequate support for generic claims to an isolated DNA encoding a native mammalian TRAF 1 or TRAF 2 protein. It does not, however, provide the needed support for specific claims to any particular mammal other than murine. Whereas Applicant may be entitled to generic claims which **encompass** a DNA encoding a human TRAF protein, they are not entitled to claims which are specifically directed to this species unless the instant specification identifies that property or combination of properties which is unique to a DNA encoding a

human TRAF protein and which distinguishes it from DNAs encoding other mammalian TRAF proteins.

Claims 51 and 52 are rejected under 35 U.S.C. § 112, first paragraph, for the reasons set forth in the objection to the specification.

3) Claims 11 to 13 and 17 are rejected under 35 U.S.C. § 112, first paragraph, as the disclosure is enabling only for claims limited to a nucleic acid encoding a native mammalian TRAF1 or TRAF2 protein or encoding a TRAF protein comprising at least amino acids 180 to 409 of SEQ ID NO:2 or amino acids 264 to 501 of SEQ ID NO:4. Section "(4)" of claim 11 permits this claim to encompass a nucleic acid encoding a protein whose amino acid sequence differs substantially from a native TRAF protein. The text from line 24 on page 20 to line 9 on page 21 of the instant specification indicates that a "TRAF domain" is approximately 230 amino acids in length. The stringent hybridization limitation of claim 11 permits it to encompass a nucleic acid whose nucleotide sequence deviates from the sequence of the nucleic acid encoding the TRAF region of a native protein by at least 5%. Because three nucleotide bases are required to encode one amino acid, a nucleic acid which is encompassed by this claim can encode an amino acid sequence which deviates from either of the two disclosed TRAF region amino acid sequences in as many as 34 out

of 230 residues. *In re Fisher*, 427 F.2d 833, 166 USPQ 18 (CCPA 1970), held that

> "Inventor should be allowed to dominate future patentable inventions of others where those inventions were based in some way on his teachings, since such improvements while unobvious from his teachings, are still within his contribution, since improvement was made possible by his work; however, he must not be permitted to achieve this dominance by claims which are insufficiently supported and, hence, not in compliance with first paragraph of 35 U.S.C. 112; that paragraph requires that scope of claims must bear a reasonable correlation to scope of enablement provided by specification to persons of ordinary skill in the art; in cases involving predictable factors, such as mechanical or electrical elements, a single embodiment provides broad enablement in the sense that, once imagined, other embodiments can be made without difficulty and their performance characteristics predicted by resort to known scientific law; in cases involving unpredictable factors, such as most chemical reactions and physiological activity, scope of enablement varies inversely with degree of unpredictability of factors involved."

Because of the well established unpredictability of protein chemistry, one does not have a reasonable expectation that 34 out of the 230 amino acid residues in a native TRAF region can be changed at random and result in a protein having TRAF biological activity. The instant specification does not identify those amino acid residues in the TRAF domain of SEQ ID NO:2 or 4 which are critical for the biological activity and structural integrity of that domain. It does not provide a single working example of a nucleic acid which encodes a TRAF protein domain whose amino acid sequence is not native. It does not identify structurally analogous proteins for which this information is known and can be applied to the proteins of the instant invention. Therefore, it

is clear that a practitioner of the art can not employ sound scientific law to predict which of the nucleic acids which meet the material limitations of the instant claims will also meet the functional limitations recited therein. See M.P.E.P. §§ 706.03(n) and 706.03(z).

4) Claims 51 and 52 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. These claims are vague because there is no antecedent basis for "its native human analog". These claims should refer to "a native human analog thereof".

5) Claim 17 rejected under 35 U.S.C. § 112, fourth paragraph, as being of improper dependent form for failing to further limit the subject matter of a previous claim. 35 U.S.C. § 112, fourth paragraph, requires a claim in dependant form to contain a reference to a claim previously set forth and then specify a further limitation of the subject matter claimed. The process of claim 17 does not further limit the nucleic acid that is claimed in claim 11, from which claim 17 depends. Claim 17 should be presented as an independent claim.

35 U.S.C. § 101 reads as follows:

> "Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title".

6) Claim 17 is rejected under 35 U.S.C. § 101 because it is drawn to non-statutory subject matter. Specifically, a "method of using" is not patentable. This claim should be directed to a method of making a TRAF protein.

7) The instant claims are drawn to subject matter which was neither disclosed or suggested by the prior art of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John D. Ulm at telephone number (703) 308-4008. The examiner can normally be reached on Monday through Friday from 9:00 AM to 5:30 PM. The fax phone number for this group is (703) 308-0294.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

JOHN ULM
PRIMARY EXAMINER
GROUP 1800